ROZANOV, A.N.

Process of secondary salinization and its present state on the Pakhta-Aral State Farm. Trudy Pochv. inst. 29:343-393 '48.
(Golodnaya Steppe--Alkali lands) (MLRA 10:8)

x8 38023. ROZANOV, A. N.

SYEROZYEM KAK POCHVYENNYY TIP. K ISTORII VOPROSA. /DOKLAD NA SYESSII, POSVYASHCH. 100-LYETIYU SO DNYA ROZHDYENIYA V. V. DOKUCHAYEVA. MOSKVA. YANV. 1946 g.7 TRUDY POCHV. IN-TA IM. DOKUCHAYEVA, T. XXX, 1949, S. 234-52 - GIBLIOGR: S. 251-52.

13C

8-3-1

PROCESSES AND PROPERTIES INDEX

Great Turkmen canal and our problems. A. N. Rozanov (*Pochvovedenie*, 1950, 640—648; *Soils & Fert.*, 1951, 14, 170).—The construction of the canal and the possible irrigation of 3,000,000 hectares are discussed. Typical soil formations are takyrs and saline serozems.

C. B. North.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ROZANOV, A. N.,

Science

Sierozem soils of Central Asis
Moskva, Akademiia nauk SSSR, 1951.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

PC

B3
1

Serozem soils and ley rotations. A. N. Rozanov. (*Pochvovedenie*, 1951, [illegible]–109; *Soils & Fert.*, 1951, [illegible], 249).—Use of two-year leys in a [illegible] for the irrigated cotton districts of C[illegible] Asia. The soils are almost structureless, but acquire a structure under a ley. The structure disappears quickly when the ley is ploughed. A year later, only 7% of the org. residues left by the ley [illegible] in the soil. C. B. North.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ROZANOV, A. N.

Soils - Soviet Central Asia

"Gray desert soils of Central Asia." Reviewed by S. A. Kudrin. Pochvovedenie, no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED.

ROZANOV, A. N.

Soils - Classification

Problem of loess and gray-soil formation. Pochvovedenie No. 7, 1952

Monthly List of Russian Accessions, Library of Congress, September 1952, UNCLASSIFIED.

1. ROZANOV A.N.

2. USSR (600)

4. Soils-Kura-Araks Lowland

7. Gray-brown soils of the Kura-Araks Lowland, Pochvovdenie no.12, 1952.

9. Monthly List of Russian Accessions, Library of Congress. April 1953, unclass.

ROZANOV, A. N.

[illegible] of the Council of Ministers USSR in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin prizes for the years [illegible] (Sovetskaya Kultura, Moscow, No. [illegible] - 3 Apr 1954)

Name	Title of Work	Nominated by
Rozanov, A. N.	"Sierozems of Central Asia"	Institute of Soils imeni V. V. Dokuchayev, Academy of Sciences USSR

ROZANOV, A. N.

USSR/ Scientific Organization - Agriculture

Card 1/1 : Pub. 124 - 22/35

Authors : Rozanov, A. N., Dr. of Geol. and Mineral. Sc.

Title : Means of increasing soil fertility and the utilization of virgin soil (Vol. 24)

Periodical : Vest. AN SSSR 7, 83-87, July 1954

Abstract : Minutes of meeting held at the V. V. Dokuchaev Soil Institute of the Acad. of Sc. USSR, at which various means of increasing soil fertility and the utilization of virgin soil were discussed

Institution : .....

Submitted : ....

ROZANOV, A.N.

New data on the genesis and amelioration of solonetz in U.S.S.R. A. N. Rozanov (V. V. Dokuchaev Inst. Soil Sci., Acad. Sci. U.S.S.R., Moscow). *Pochvovedenie* 1955, No. 11, 5-25.—A review and crit. analysis with 48 references. I. S. Joffe

MD

Rozanov, A. N.

USSR/ Agriculture - Scientific literature

Card 1/1 Pub. 86 - 35/38

Authors : Rozanov, A. N., Dr. Geologo-Min. Sc.; and Shkonde, E. I., Cand. Agri. Sc.

Title : Popular scientific literature for aiding the agricultural economy

Periodical : Priroda 44/7, 120 - 123, Jul 1955

Abstract : A review is made of a series of books published by the Acad. of Sc., USSR, which were written by various authors and intended to make available pertinent, up-to-date, scientific information to persons engaged in agriculture. The books cover a wide range of subjects with special emphasis on soil science and soil fertilization. Despite some shortcomings, which are pointed out, the books are given a high rating. Five USSR references (1954). Illustration.

Institution : .....

Submitted : .....

ROZANOV, A. N.

"The Role of Sodium in the Maintenance of the Fertility of Soils," a paper presented at the 6th International Soil Science Congress, Paris, 28 Aug to 8 Sep 56.

In Library Branch #5

"Grey Chestnut Soils as a Special Soil Type," ibid.

"Secondary Salinization and Its Control," ibid.

ROZANOV, A. N.

"Gray-Chestnut Soils as a Special Type of Soil," Sixth Congress on Soil Science, Paris, 1956

Translation U-3053983

J-5

USSR/Soil Science. Tillage. Land Reclamation. Erosion.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24826.

Author : Rozanov, A.N.
Inst :
Title : On the Future Irrigation of the Golodnoy Steppe.

Orig Pub: Pochvovedeniye, 1957, No 1, 9-14.

Abstract: Out of the total area of 800 thousand ha. of the Golodnoy steppe, ~ 200 thousand ha. are cultivated at the present time. The soils within the limits of the steppe contain considerable quantities of water-soluble salts and gypsum with mineralized (5-15 g/l) subsoil waters. Here salty, light, strongly solonchak grey desert soils, which in the sourthern part of the steppe dominate in the complex with meadow-saline soils and with salt

Card : 1/2

ROZANOV, A.N.

[redacted]

Natural conditions in the Altai Territory and agricultural utilization of virgin and idle lands. Izv. AN SSSR. Ser.biol. no.4: 401-415 Jl-Ag '57. (MLRA 10:8)

1. Pochvennyy institut Akademii nauk SSSR
(ALTAI TERRITORY--AGRICULTURE)

J

Country : USSR
Category: Soil Science. Cultivation. Improvement. Erosion.

Abs Jour: RZhBiol., No 14, 1958, No 63135

Author : Rozanov, A.N.; Kondorskaya, N.I.
Inst : Soil Science Institute of the A.S. of the USSR
Title : Soil Improvement Conditions of the Kirovabad-Kazakhskiy Mountain Range

Orig Pub: Tr. Pochv. in-ta AN SSSR, 1957, 52, 5-112

Abstract: In the higher parts of the Little Caucasus foothills there are distributed dark gray-brown soils, which are distinguished by the great (more than 120 cm) thickness of the humus profile, the well-expressed carbonate-alluvial horizon and the clayey-

Card : 1/5

J

Country : USSR
Category: Soil Science. Cultivation. Improvement. Erosion

Abs Jour: RZhBiol., N 14, 1958, No 63135

gray-brown soils in their thinner discrete horizons, lower humus content, alkalinity of the carbonates and degree of clayeyness On ancient terraces there are found salty and gravelly-rubbly gray-brown soils. On ancient terraces of the Kura river, light gray-brown soils are distributed which are characterized by a less differentiated profile and weak clayeyness. The humus content is 1.8-2.2%, the exchange capacity, 22-27 milli-equiv. On upper parts of foothill trails there are distributed gray-brown gypsum-bearing soils on stony-talus deposits with humus horizons up to 30-50 cm thick. The content of water-soluble salts in the gypsum

Card : 3/5

J

Country : USSR
Category: Soil Science. Cultivation. Improvement.
Erosion

Abs Jour: RZhBiol., No 14, 1958, No 63135

horizon is 1-1.5%. Under conditions of increased ground moisture, meadow gray-brown soils are found with a developed humus horizon and indications of gleying and marl formation. Bamboo meadow, generally solonchak soils, are coordinated to the thinning out foci of ground waters. The alluvial-meadow, alluvial marsh-meadow, meadow-marsh and solonchak soils are coordinated to the lower terraces of the rivers. In regions of ancient agricultural cultivation, old irrigated gray-brown soils of high fertility are distributed.

Card : 4/5

J-69

ROZANOV, A.N.

GELLER, S.Yu.; ZIMINA, R.P.; KEMMERIKH, A.O.; KUNIN, V.N.; KUVSHINOVA, K.V.; MURZAYEV, E.M., doktor geograf.nauk; RYAZANTSEV, S.N.; FORMOZOV, A.N.; FREYKIN, Z.G.; CHUBUKOV, L.A.; ZABIROV, R.D.; KOROVIN, Ye.P.; ROZANOV, A.N.; RODIN, L.Ye.; RUBTSOV, N.I.; SPYGINA, L.I., red. izd-va; POLENOVA, T.P., tekhn.red.

[Central Azia; its physical geography] Sredniaia Aziia; fiziko-geograficheskaia kharakteristika. Moskva, 1958. 647 p. (MIRA 11:6)

1. Akademiya nauk SSSR. Institut geografii. 2. Institut geografii Akademii nauk SSSR (for Geller, Zimina, Kemmerikh, Kunin, Kuvshinova, Murzayev, Ryazantsev, Formozov, Freykin Chubukov). 3. Akademiya nauk Kirgizskoy SSR (for Zabirov). 4. Akademiya nauk Uzbekskoy SSR (for Korovin). 5. Pochvennyy institut AN SSSR (for Rozanov). 6. Botancheskiy institut AN SSSR (for Rodin). 7. Akademiya nauk Kazakhskoy SSR (for Rubtsov)

(Soviet Central Asia--Physical geography)

IVANOVA, Ye.N.: LOBOVA, Ye.V.; ROZANOV, A.N.

Review of works on soil genesis in vol. 5 of the proceedings of the 6th International Congress of Soil Scientists. Pochvovedenie no.5: 62-70 My '58. (MIRA 11:6)

1.Pochvennyy institut im. V.V. Dokuchayeva AN SSSR.
(Soil formation)

KOZANOV A. N.

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PHASE I BOOK EXPLOITATION SOV/2059

Akademiya nauk SSSR. Pochvennyy institut im. V. V. Dokuchayeva

Pochvennaya s"yemka; rukovodstvo po polevym issledovaniyam i kartirovaniyu pochv (Soil Surveying; A Manual on Field Surveying and Mapping of Soils) Moscow, Izd-vo AN SSSR, 1959. 346 p. 7,000 copies printed. Errata slip inserted.

Resp. Eds.: I.V. Tyurin, Academician, I. P. Gerasimov, Academician, Ye. N. Ivanova, Professor, and V. A. Nosin, Candidate of Sciences; Ed. of Publishing House: V. Ya. Markov; Tech. Ed.: I. P. Kuz'min.

PURPOSE: This book is intended for students and practitioners of soil science and land utilization. It will also be of interest to geographers and cartographers engaged in soil surveying and mapping projects.

COVERAGE: This work on soil surveying was prepared by a group of scientists of the Department of Soil Geography and Cartography of the Pochvennyy institut AN SSSR (Soil Institute, AS USSR). The book discusses the methods used in both general and special-purpose surveys. The basic aim of all operations is to raise agricultural productivity and introduce wise land utilization. The book includes representative maps and samples of the forms and reports to be used by the soil scientist. No personalities are mentioned. There are 46 Soviet references.

Soil Surveying (Cont.) SOV/2059

PART II

Ch. 1. Soil Studies as Related to Land Use and Agricultural Planning in Kolkhoz'es and Sovkhozes (M.N. Malyshkin) 171
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• Processing of Materials Obtained from a Soil
.A. Mogina and N.N. Rozov)
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of soil analyses
nishing soil maps
cartographic base
legend of a soil
oundaries

BAZILEVICH, N.I., otv.red.; ROZANOV, A.N., otv.red.; MARKOV, V.Ya.,
red.izd-va; KHATSKELEVICH, L.M., red.izd-va; KASHINA, P.S.,
tekhn.red.

[Soils of the Altai Territory] Pochvy Altaiskogo kraia. Moskva,
1959. 380 p. (MIRA 13:6)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh
sil.
(Altai Territory--Soils)

ROZANOV, A.N.

Role of irrigational deposits in the genesis, fertility, and improvement of irrigated soils [with summary in English]. Pochvodedenie no.2:8-18 F '59. (MIRA 12:3)

1. Pochevennyy institut imeni V.V. Dokucheyeva AN SSSR.
(Irrigation) (Soil formation)

ROZANOV, A.N.

Old soils of the loess region in Hwang Ho Basin. Pochvovedenie no.5:1-12 My '59. (MIRA 12:8)

1. Pochvennyy institut im. V.V.Dokuchayeva AN SSSR.
(Hwang Ho Valley--Soils)

ROZANOV, A.N.

"Hei-lu-tu" soils of the loess region in the Hwang Ho Basin.
Pochvovedenie no.10:59-70 O '59. (MIRA 13:2)

1. Pochvennyy institut im.V.V.Dokuchayeva AN SSSR.
(Hwang Ho Valley--Soils)

ANTIPOV-KARATAYEV, I.N., akademik, otv.red.; TYURIN, I.V., glavnyy red.; GORBUNOV, N.I., red.; VERIGINA, K.V., red.; ZONN, S.V., red.; IVANOVA, Ye.N., red.; KEDROV-ZIKHMAN, O.K., red.; KONONOVA, M.M., red.; LOBOVA, Ye.V., red.; MISHUSTIN, Ye.N., red.; RODE, A.A., red.; ROZANOV, A.N., red.; SOKOLOV, A.V., red.; FRIDLAND, V.M., red.; SHUVALOV, S.A., red.; YEFIMOV, A.L., red.izd-va; MAKUNI, Ye.V., tekhn.red.

[Reports of Soviet soil scientists to the 7th International Congress in the U.S.A.] Doklady sovetskikh pochvovedov k VII Mezhdunarodnomu kongressu v SShA. Moskva, Izd-vo Akad.nauk SSSR, 1960. 487 p. (MIRA 13:10)

1. International Congress of Soil Science. 7th. 2. AN Tadzhikskoy SSR (for Antipov-Karatayev). 3. Pochvennyy institut im. V.V. Dokuchayeva Akademii nauk SSSR, Moskva (for Antipov-Karatayev, Gorbunov,

(Continued on next card)

ANTIPOV-KARATAYEV, I.N.---(continued) Card 2.

Ivanova,.Kononova, Rozanov,.Fridland, Sokolov).. 4. Laboratoriya lesovedeniya Akademii nauk SSSR, Moskva (for Zonn). 5. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya Vsesoyuznoy ordena Lenina Akademii sel'skokhoz.nauk imeni V.I.Lenina i Institut zemledeliya akademii sel'skokhoz.nauk Belorusskoy SSR (for Kedrov-Zikhman). 6. Institut mikrobiologii Akademii nauk SSSR, Moskva (for Mishustin). 7. Nauchnyy institut po udobreniyam i insektofungitsidam im. Ya.V.Samoylova, Moskva (for Sokolov).

(Soil research)

ROZANOV, A. N.

"Ancient Farming And Evolution Of Soils".

report submitted for the 7th Congress of International Society of Soil Science Madison, Wisconsin, 15-23 Aug 60.

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S/170/60/003/04/15/027
B007/B102

18.1200

AUTHORS: Bychkov, Yu. F., Maskalets, V. N., Rozanov, A. N.

21

TITLE: Characteristic Features in the Beta Phase Decay in Zirconium Alloys

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 4, pp. 95 - 98

TEXT: The data known from publications and obtained by the authors indicate a relation between stability of the beta-phase in zirconium alloys and concentration of the outer electrons. It is shown that the degree of stability of the beta-phase and the composition of the alloys, in which the omega-phase is formed in hardening, depends to a considerable extent on the concentration of the outer electrons in the alloy. For this reason chromium and molybdenum must have a stabilizing effect on the beta-phase, twice as strong as that of niobium or vanadium. In the present case zirconium alloys with 15 % by weight of Nb and such with 10 % by weight of Mo were investigated. The experiment is briefly described. It showed that the dependence of the physical properties of hardened zirconium alloys with 15 % Nb and of such with 10 % Mo on the temperature of heating is not monotonic. The experimental data concerning the alloy with 10 % Mo are given in Fig. 1; the data concerning

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Characteristic Features in the Beta Phase Decay in Zirconium Alloys

S/170/60/003/04/15/027
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the alloy with 15 % Nb are given in the paper of Ref. 2. Fig. 2 shows the change of the modulus of elasticity E, of the electric resistivity ϱ and of the Brinell hardness in isothermic drawing at 300, 400 and 500°C of the zirconium alloys with 15 % Nb. Fig. 3 shows the same for a zirconium alloy with 10 % Mo. The change of the alloy properties in drawing, the increase of the electric resistance by 10 %, of the modulus of elasticity by 65 -75 %, of hardness by twice its amount, is somehow connected with the character of the omega transition phase and with the change of the properties of the matrix. The high values of the modulus of elasticity (more than 10 000 kg/mm^2) and probably also the decrease in volume of the alloy in omega-phase formation are indicative of intermetallic properties of the omega-phase insofar as beta-phase lattice tensions (arising when the new phase is forming) may lead to an increase in electric resistance and in hardness, but not to an increase of the modulus of elasticity. A formula for calculating the activation energy of the formation of the omega-phase is written down on the assumption that a certain quantity and degree of separation of the omega-phase corresponds to the electric resistivity maxima at 300 and 400°C, and that the omega-phase formation depends exponentially on temperature. The results obtained in the calculation of the activation energy show that the omega-phase formation

Card 2/3

LX

ROZANOV, A.N.; YAKUBOV, T.F.; MINASHINA, N.G.

In the United Arab Republic (Egypt). Pochvovedenie no. 5:112-115
My '61. (MIRA 14:5)

1. Pochvennyy institut imeni V.V. Dokuchayeva AN SSSR.
(United Arab Republic—Soils)

ROZANOV, A.N., doktor geol.-miner. nauk, otv. red.; PAVLOV, A.N., red. izd-va; PRUSAKOVA, T.A., tekhn. red.; POLENOVA, T.P., tekhn. red.

[Land improvement in the Kura-Aras Lowland]Melioratsiia pochv Kura-Araksinskoi nizmennosti. Moskva, Izd-vo Akad. nauk SSSR, 1962. 243 p. (MIRA 15:9)

1. Akademiya nauk SSSR. Pochevennyy institut imeni V.V.Dokuchayeva. (Kura-Aras Lowland--Saline and alkali soils)

ROZANOV, A.N., doktor geol.-miner. nauk, otv. red.[deceased]; YEGOROV, V.V., doktor biol. nauk, otv.red.; PAVLOV, A.N., red. izd-va; YEGOROVA, N.F., tekhn. red.

[Effect of irrigation on soils in the oases of Central Asia] Vliianie oroshenia na pochvy oazisov Srednei Azii. Moskva, Izd-vo AN SSSR, 1963. 105 p. (MIRA 16:9)

1. AN SSSR. Pochvennyy institut imeni V.V.Dokuchayeva.
(Soviet Central Asia--Soils)
(Soviet Central Asia--Irrigation)

ROZANOV, A.N.

5

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18

Hardness of cementite. A. N. Rozanov. *Metalloved. i Termichesk. Obrabotka* (Moscow: Metallurgizdat) 1954, No. 1, 149–55; *Referat. Zhur., Met.* 1956, No. 1685.—Hardness of cementite of two pure C steel alloys, C 4.9 and 4.1%, and 0.4% impurities was detd. after cooling from various temps. at various rates. It was shown that hardness *T* of cementite is not const. and changes with temp. of hardening, whereupon max. *T* is obtained after cooling in air from ~750°. After annealing, *T* does not change on cooling in water beginning from 20° below Ac_1. On cooling cementite in water at >750°, *T* sharply drops to 530 H_B. Cementite in C steel appears to be a phase of variable compn., representing, apparently, a solid soln. of Fe in cementite. This phase can be deducted from solid soln. calcns. V. N. Bednarski

ROZANOV, A.N.

USSR/Engineering - Metal cementation

Card 1/1 Pub. 128 - 17/32

Authors : Rozanov, A. N.

Title : Cementation in a smelted crude iron

10124

Periodical : Vest. mash. 11, 60-61, Nov 1954

Abstract : A new method which results in speeding-up the cementation in a smelted crude iron is described. Cementation tests were conducted on components made of the type 10 and 12KhN3A steels, by dipping them in a smelted crude iron containing 3.8% C and 2% Si, and having a temperature of 1300°C. Illustration; graphs.

Institution : ...

Submitted : ...

ROZANOV, A. N.

18 18

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1

✓Structure and properties of cementite. A. N. Rozanov. *Metalloved. i Sovremen. Metody Termichesk. Obrabotki Chuguna* (Moscow: Gosudarst. Nauch.-Tekh. Izdatel. Mashinostroitel. Lit.) *Sbornik* 1955, 47-67; *Referat. Zhur., Met.* 1956, Abstr. No. 7890.—The Vickers hardness of cementite in alloys contg. 4.1-4.2% of C was 1110-45. On quenching from 800° after soaking for 40 min., the Brinell hardness of cementite is max. The metallographic detn. of ratio of thickness of ferrite flakes to that of cementite flakes in the alloy was 5.68, instead of 7 as was previously accepted. The C content in cementite decreases with the increase of the temp. of quenching. On cooling a liquid alloy of hypereutectic compn., there are formed crystals of primary cementite higher in C than is the eutectic cementite. The hardness of cementite is decreased by graphitization of the alloy. The Curie point for cementite does not change in the interval 20-700°; with increase of quenching temp. to 750° the Curie point rises, and then falls.

A. N. Pestoff

Distr: 4E2c

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Rozanov, A.N.

Hardness of graphite inclusions. A. N. Rozanov. *Liteinoe Proizvodstvo* 1956, No. 3, 12-13.—~~Microhardness~~ detn. of graphite inclusions in different irons, including nodulized, gave a range of 18-110 Vickers under a 20-g. load. Darker inclusions were softer than lighter ones. Graphite of conventional gray Fe had a hardness of 30, that of malleable Fe of 28, and graphitic inclusions of nodulized Fe ranged between 18 and 110 in hardness.

J. D. Gat

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ROZANOV, A.N.

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1AE2c

1AE3d

1-RY

SOME PROPERTIES OF ZIRCONIUM-NIOBIUM ALLOYS. Yu. F. Bichkov, A. N. Rozanov, and D. M. Skorov. J. Nuclear Energy 5, 462-7(1957).

The constitution of zirconium-niobium alloys has been investigated and modifications to the existing equilibrium diagram are suggested. The mechanical properties of the alloys at room temperature have been determined and the hot-strength at temperatures of up to 750°C has been deduced from hardness measurements. Also, hardness has been measured after low-temperature ageing treatments. Measured results are correlated with the equilibrium diagram. The resistance of the alloys to oxidation in air has been determined in the temperature range 570 to 650°C. (auth)

ROZANOV, A. N.

27 27

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1-4E2c

1-4E3d

1-RB

YOUNG'S MODULUS OF ZIRCONIUM–NIOBIUM ALLOYS. Yu. F. Bichkov, A. N. Rozanov, and D. M. Skorov. J. Nuclear Energy 6, 408-12(1957).

The results are given of measurements of the value of Young's modulus for zirconium-niobium alloys in vacuum at temperatures up to 950°C, and also at room temperature after various heat treatments. (auth)

SOV/137-58-11-23615

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 249 (USSR)

AUTHORS: Bychkov, Yu. F., Rozanov, A. N., Skorov, D. M.

TITLE: Elastic Properties and Hardness of Zirconium-niobium Alloys at Elevated Temperatures (Uprugiye svoystva i tverdost' splavov tsirkoniya s niobiyem pri povyshennykh temperaturakh)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, Nauchno-tekhn. o-vo tsvetn. metallurgii, 1957, Nr 30, pp 268-282

ABSTRACT: A Zr-Nb phase diagram is plotted. The mechanical and certain physical properties of alloys (A) thereof are investigated relative to temperature and time. The A are made in an arc furnace with a W electrode in an Ar atmosphere. The charge employed is Zr iodide containing 1.5% Hf also Nb foil with 1% Ta added. After repeated remelting, contamination with W is <0. 1%. A with less than 20% Nb are forged at 800-500°C, while samples with greater Nb content are made from cast rods. The phase diagram plotted is identical in appearance with that of Rogers and Atkins (RZhMet, 1956, Nr 7, abstract 6709), but the transformation temperatures are somewhat lower owing to the difference in the chemical composition

Card 1/2

SOV/137-58-11-23615

Elastic Properties and Hardness of Zirconium-niobium Alloys (cont.)

of the starting materials. The graph of H_B versus composition presents a flat maximum (260 kg/mm^2) at 50-80% Nb and a peak of diffusionless transformation at 7.5% Nb, which disappears upon slow cooling of the A from 650°. Quenched A are noticeably hardened by aging. As Nb content increases there is a rise in H_B at elevated temperatures, particularly at >20% Nb. Upon heating from 20° to 750° the hardness of A containing not less than 50% Nb is reduced by 20-30%, while when Nb content is about 7% the decline is by 95 to 97%. A study of the influence of A contents upon ρ makes it possible to clarify the dependence of E upon composition after various heat treatments. It is found that the strength of the interatomic bond in quenched Zr-Nb solid solutions is considerably less than the strength of the bond in pure Zr and in solid solutions with small additions of Nb. Distortion in the crystal lattice as the result of alloying and heat treatment results in a sharp change in E and ρ. Upon heating from 20 to 900° the value of E drops by 59% for Zr and only by 6.6% for A containing 75% Nb. At 900° all A have a substantially higher E than does pure Zr. Thus in Nb-rich A the properties characterizing heat resistance and the strength of the interatomic bond change considerably less than the properties of Zr-rich A in the same temperature intervals.

G. T.

Card 2/2

ROZANOV, A.N

PA - 2258

AUTHOR: BYCHKOV,YU.F., ROZANOV,A.N., SKOROV,D.M.
TITLE: Some Properties of Zirconium-Niobium Alloys. (Nekotoryye svoystva splavov tsirkoniya s niobiyem, Russian).
PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 2, pp 146 - 151 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 5 / 1957

ABSTRACT: The samples serving for the study and mechanical testing of the Zr-Nb system were produced from zirconium-iodide bars with ~1,5% hafnium and of a niobium foil with a content of ~1% tantalium in an electric arc furnace with copper bottom and tungsten electrodes. The samples were amalgamated in a purified arcon atmosphere. Metallographic and radiographic investigations were carried out by means of the usual methods. Solidus- and liquidus lines were determined in a vacuum furnace.

The state diagram of the zirconium-niobium system: In the case of samples which were chilled after homogeneigation at 1250° C and in the case of cast samples a continuous series of solutions with a space-centered cubic lattice developes at high temperatures. The alloys with a high content of niobium decompose when being annealed, on which occasion all lines in the radiogram separate into two parts. The solidus- amd liquidus curves obtained from initial and total smelting have a minimum at 25 - 28% niobium and 1600°C.

Card 1/3

PA - 2258

Some Properties of Zirconium-Niobium Alloys.

The mechanic properties of the Alloys: The dependence of the limit of stability as well as of the relative expansion on the niobium content of the alloys annealed at 700° C is shown in a diagram. The alloy with 7,5% niobium has the maximum stability limit(75 kg/mm^2) and the minimum relative expansion (6%). All other alloys have a relatively great expansion, i.e. it is rather plastic. The alloys with from 5 to 10% niobium are brittle in cast state as well as after chilling (from high temperatures). The dependence of hardness on composition is similar to the analogous dependence of the stability limit. The dependence of the hardness of the chilled as well as of the cast alloys on composition can be expressed by a curve with a flat maximum at 50 - 80% Nb; it is characteristic of a continuous number of solid solutions. This curve is superposed by a peak that is due to a diffusionless transformation of the cubic β-phase into the needle-shaped α-phase. Next, the strength of the alloys at high temperatures is discussed; it is considerably lower with alloys that have a high content of zirconium than with alloys on a niobium basis. The greater the content of niobium in the alloys is, the lower is the alloy's power of resistance against oxidation. (7 illustrations).

Card 2/3

PA - 2258

Some Properties of Zirconium-Niobium Alloys.

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED 17.5.1957
AVAILABLE: Library of Congress.

Card 3/3

"Young's Modulus of Alloys of Zirconium With Niobium," by Yu. F. Bychkov, A. N. Rozanov, and D. M. Skorov, Atomnaya Energiya, Vol 2, No 2, Feb 57, pp 152-156

Results of measuring the Young's modulus of zirconium-niobium alloys in vacuum at temperatures up to 950° are reported. The elasticity was also measured at room temperature after various types of heat treatment. (U)

Sum. 1332

Rozanov A. N.

20-4-24/60

AUTHOR: Rozanov, A. N.

TITLE: The Influence of Carbon and of the Temperature of Hardening of Steel on the Hardness of Martensite (Vliyaniye ugleroda i temperatury zakalki stali na tverdost' martensita).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 4, pp. 721-722 (USSR)

ABSTRACT: The first series of the steel samples with various carbon-content was heated in evacuated quartz ampules to 1100°C and cooled in water. After quenching dark martensite-needles are usually obtained. The second series of samples was heated to 1200°C, kept at this temperature for 2 hours and then cooled in water. After quenching of the steel samples with a carbon-content of 1,5; 1,7 and 1,9%, white martensite needles are obtained. The modification of the hardness of the white martensite needles as a function of the carbon content is illustrated by a diagram and the microstructure of the steel is illustrated by a photograph. The dark martensite needles were produced at a higher temperature than the white martensite needles and therefore they can precipitate a considerable amount of very fine cementites in cooling during quenching. The white needles were produced at a lower temperature and therefore no self-tempering took place in them. This very fact causes the difference in the hardness and in the etching

Card 1/3

20-4-24/60

The Influence of Carbon and of the Temperature of Hardening of Steel on the Hardness of Martensite.

degree of the martensite needles. The micro-hardness of martensite and the hardness of steel decrease with increasing quenching temperature. The author supposes the following causes for this decrease in hardness: With greater heating of the steel the carbon content in austenite increases and therefore the martensite-point is lowered. The lower the martensite-point, the weaklier the process of the self-tempering of martensite take place. The process of the dispersion-like hardening and the carbon content in the supersaturated solid solution of α-iron determine the hardness of martensite. The increase in the hardening temperature of steel increases the homogeneity of austenite, by which fact the martensite point is also somewhat lowered. Thereby the self-tempering and the hardness of martensite are reduced. In the steel quenched from the highest temperature, only white martensite-needles were produced, which had the smallest microhardness.
There are 4 figures and 2 Slavic references.

Card 2/3

20-4-24/60

The Influence of Carbon and of the Temperature of Hardening of Steel on the Hardness of Martensite.

ASSOCIATION: Moscow Engineering and Physical Institute (Moskovskiy inzhenerno-fizicheskiy institut).

PRESENTED: March 25, 1957, by A. A. Bochvarov, Academician.

SUBMITTED: March 25, 1957.

AVAILABLE: Library of Congress

Card 3/3

ROZANOV, A.N., Doc Tech Sci -- (diss) "Study of cementite and its effect on the properties of alloys." Mos, 1958, 32 pp with illustrations (Min of Higher Education USSR. Mos Engineering Physics Inst) 150 copies. Bibliography: p 30-31 (23 titles) (KL, 27-58, 107)

ROZANOV, A-N.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.M. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

Lanskaya, K.A., R.M. Kireyeva, and E.N. Gorchakova. EI 736 Austenitic Steel 19

Khimushin, F.F., Z.A. Sheryankova, O.Ya. Moskalenko, M.K. Kernich, and B.E. Lyubinskiy. EI696 and EI 696A Heat-Resistant Chromium-Nickel-Titanium Steel 25

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Romanov, P.V. Regularities of the Thermokinetic Change in Austenite and the Problem of the Development of New Alloys 137

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45

32801
S/137/61/000/012/121/149
A006/A101

18.1272 1521 1418

AUTHORS: Bychkov, Yu.F., Rozanov, A.N., Skorov, D.M.

TITLE: Zirconium-niobium phase diagram

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 23, abstract 12Zh168 (V sb. "Metallurgiya i metalloved. chist. metallov", no. 1, Moscow, 1959, 179 - 191)

TEXT: The X-ray, thermal, dilatometric, thermal-elastic and metallographic methods were employed to study transformations and to plot a phase diagram of the Zr-Nb system. The alloys investigated were melted in an arc furnace in argon atmosphere from a Nb-strip of iodide Zr rods of 99.7% purity. After 3-5 fold remelting the ingots were forged at 800-600°C and subjected to heat treatment. It was established that in the Zr-Nb system at high temperatures a continuous series of solid solutions is formed between β-Zr and Nb with a minimum on the solidus curve at 1,600°C and 30% Nb. At 560°C, the eutectoid decomposition of β-solid solutions takes place. The eutectoid point corresponds to 12% Nb. During the quenching of alloys containing up to 15% Nb, the β-solution is

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32801

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A006/A101

Zirconium-niobium phase diagram

partially or fully transformed into acicular or reticular martensite-like structure. In alloys with 15% and more Nb, a body centered cubic β-phase appears during quenching from high temperatures.

A. Belinkiy

[Abstracter's note: Complete translation]

X

Card 2/2

32617
S/137/61/000/011/075/123
A060/A101

18 1272

AUTHORS: Bychkov, Yu.F., Rozanov, A.N.

TITLE: Change in the physical characteristics under decomposition of the β-phase in the alloy of zirconium with 15% niobium

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 35, abstract 11Zh212 (V sb. "Metallurgiya i metalloved. chist. metallov.", no. I, Moscow, 1959, 224 - 230)

TEXT: The aging process of the alloy of Zr with 15% Nb water-hardened at 1,100°C and having a β-phase structure was investigated by the measurement of E, ρ, the thermal expansion, and the hardness. Under heating of the alloy up to 350°C the E is lowered somewhat, and then increases, attaining a maximum at 520°C and then decreases again with further heating up to 900°C. In the process of cooling the E increases monotonously, attaining higher values at room temperature than in the hardened state. The described pattern is explained by the formation during heating of the solid β solution of a new phase with high E. The maximum on the curve of E vs temperature dependence is explained by the formation of the greatest quantity of the new phase at 500°C. The new phase has a lower specific volume.

Card 1/2

BYCHKOV, Yu.F.; KLIMOV, A.F.; ROZANOV, A.N.; SKOROV, D.M.

Effect of alloying on the longitudinal elasticity modulus of zirconium. Met.i metalloved.chist.met. no.1:231-242 '59. (MIRA 12:10)

(Zirconium alloys) (Elasticity)

S/137/61/000/005/056/060
A006/A106

188300

AUTHORS: Bychkov, Yu. F.; Rozanov, A. N.; Skorov, D. M., and Cheburkov, V.I.

TITLE: Corrosion resistance of Я1-Т (Yal-T) steel in lithium with oxygen and nitrogen admixture

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 60, abstract 5I453 (V sb.: "Metallurgiya i metallovedeniye chistykh metallov", no. 2, Moscow, Atomizdat, 1960, 78-92)

/B

TEXT: The authors studied changes in the microstructure and mechanical properties of Fe, Ni, and Cr-Ni- steel grade "Yal-T" as a result of the effect of distilled Li and Li containing 1-2 weight % O or N. They investigated also changes in the chemical composition of Li due to the corrosion of the enumerated substances contained in it.

Ye. L.

[Abstracter's note: Complete translation]

Card 1/1

28063 S/137/61/000/004/036/039
A056/A101

18.3100

AUTHORS: Bychkov, Yu. F., Rozanov, A. N., Gromov, B. I., Cherbukov, V. I.

TITLE: Laboratory installation for vacuum distillation of lithium with the filling of the crucible

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1961, 50, abstract 4I399 (V sb. "Metallurgiya i metallovedeniye chistykh metallov". no. 2, M., Atomizdat, 1960, 171-177)

TEXT: The schematic diagram of a distiller for obtaining Li is described. Its operating conditions are as follows: The vaporization temperature of electrolysis crude lithium is such, that Li itself and the more volatile components (K and Na) are sublimated, while the less volatile (Fe and Ni) remain in the evaporator; the condenser temperature is fixed so that Li, precipitating at liquid state, should flow into the crucible, while the more volatile components should vaporize and precipitate only in the colder parts of the distiller. The processing is effected under a pressure of 10^{-4} mm Hg. The purity of Li attains 99.96%.

I. N.

[Abstracter's note: Complete translation]

Card 1/1

BYCHKOV, Yu.F.; ROZANOV, A.N.; ROZANOVA, V.B.

Determining the solubility of metalls in lithium. Met. i metalloved. chist. met. no. 2:178-188 '60. (MIRA 13:12)
(Lithium--Thermal properties) (Solubility)

BYCHKOV, Yu.F.; MASKALETS, V.N.; ROZANOV, A.N.

Characteristics of the disintegration of the beta phase in zirconium alloys. Inzh.-fiz.zhur. no.4:95-98 Ap '60. (MIRA 13:8)

(Zirconium alloys)

ACCESSION NR: AT4005967 S/2755/63/000/004/0160/0174

AUTHOR: Dashkovskiy, A. I.; Rozanov, A. N.; By*chkov, Yu. F.; Laptev, I. D.

TITLE: Rupture strength and internal friction of SAP alloys and effect of thermal cycles on their properties

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chisty*kh metallov, no. 4, 1963, 160-174

TOPIC TAGS: SAP alloy, SAP-1 alloy, SAP-2 alloy, SAP alloy property, SAP alloy heat resistance, SAP alloy internal friction, SAP alloy bar, SAP alloy sheet

ABSTRACT: The effect of cyclic temperature changes on the properties of SAP-1 and SAP-2 alloys containing Al_2O_3 and Fe and of commercial grade aluminum have been investigated. The average changes in temperature for sheet specimens were 100 degrees per minute during heating and 1000 degrees per second during water quenching. For rod specimens the corresponding values were 60 degrees per minute during heating and 600 degrees per second during hardening. The exposure time at the maximum temperature of the cycle was 10-40 minutes. From 550 C on up cyclic thermal treatment markedly shortened the lengths of the specimens and increased their cross sections at the maximum temperature of the cycle. As a result of

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ACCESSION NR: AT4005967

this treatment, the SAP alloys became increasingly brittle. Also, the rupture strength and ductility decreased. In the temperature interval up to 500 C the properties of the alloys remained stable. The SAP alloy sheet, which was rolled from briquets sintered in a vacuum at 700 C for two hours, showed higher ductility and a lower rupture strength than standard SAP and did not develop blisters even during thermal treatment up to 600 C. SAP-1 of the standard type has a higher heat resistance than other alloys. The prolonged stress rupture strength (up to 100 hours) was determined to be 5.5-7.5 kg/mm^2 at 375 C and 4.0-6.5 kg/mm^2 at 450 C. SAP-1 with a fine grain structure in the unrecrystallized state shows maximal internal friction. The location on the temperature curve depends on the size of the grain and the content of the secondary, finely dispersed, phase of Al_2O_3 in the aluminum. Orig. art. has: 4 tables and 9 figures.

ASSOCIATION: Inzhenerno-fizicheskiy institut, Moscow (Institute of Engineering Physics)

SUBMITTED: 00 DATE ACQ: 17Jan64 ENCL: 00

SUB CODE: MA, ML NO REF SOV: 006 OTHER: 002

Card 2/2

L 09506-67 EWT(m)/EWP(w)/EWP(j)/EWP(t)/ETI IJP(c) JD/WB/RM

ACC NR: AT6023744 SOURCE CODE: UR/2755/66/000/005/0199/0203

AUTHOR: Bychkov, Yu. F.; Laptev, I. D.; Rozanov, A. N.

44
43
B

ORG: none

TITLE: Unit for dynamic tests of metals and alloys in organic heat transfer media at high pressures and temperatures 17

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chistykh metallov, no. 5, 1966, 199-203

TOPIC TAGS: corrosion rate, heat transfer fluid

15

ABSTRACT: The article gives details of a unit permitting corrosion tests of metals and alloys in organic heat transfer media at temperatures up to 400-450°C, pressures up to 50 atm, and calculated velocities from 1.4 to 5.7 meters/sec. (See Fig. 1)

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L 09506-67

ACC NR: AT6023744

O

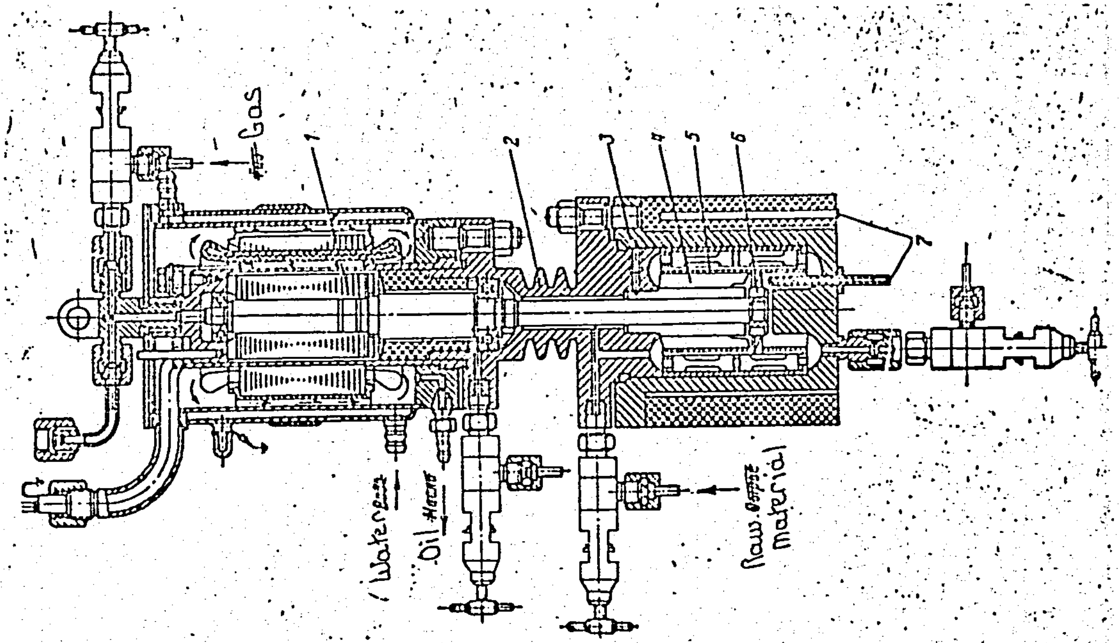

Fig. 1. Scheme of a unit for dynamic tests of metals and alloys in organic heat transfer media at high pressures and temperatures: 1--drive; 2--throat; 3--autoclave; 4--directional apparatus; 5--cell; 6--screw; 7-- thermocouple housing

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ACC NR: AT6023744

The unit pictured has been used successfully under the following experimental conditions: temperature--320°C; pressure 8 atm; organic heat transfer medium--monoisopropyldiphenyl with 0.1% water; duration of operation--500 hours. Orig. art. has: 4 figures.

SUB CODE: 11, 20/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

Card 3/3 LC

ROZANOV, A.N.; BYCHKOV, Yu.F.

[Methods for constructing diagrams of state for alloys used in nuclear power engineering] Metody postroeniia diagramm sostoianiia splavov primeniaemykh v iadernoi energetike. Moskva, 1962. 49 p. (MIRA 18:3)

1. Moscow. Inzhenerno-fizicheskiy institut.

L 40013-65 EWG(j)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWA(d)/EPR/EWP(j)/EWP(t)/
EWP(z)/EWP(b) Pc-4/Pr-4/Ps-4/Pu-4 IJP(c) RM/WW/MJW/JD/JG/WB/GS
S/0000/64/000/000/0151/0163

ACCESSION NR: AT5007906

67
62
B+1

AUTHOR: Bychkov, Yu. F.; Laptev, I. D.; Rozanov, A. N.

TITLE: The corrosive effect 18 of biphenyl on metals and oxides 27

SOURCE: Moscow. Institut atomnoy energii. Issledovaniya po primeneniyu organicheskikh teplonositeley-zamedliteley v energeticheskikh reaktorakh (Research on the use of organic heat-transfer agents and moderators in power reactors). Moscow, Atomizdat, 1964, 151-163

TOPIC TAGS: organic reactor coolant, uranium, power reactor, thermal reactor, nuclear power plant, heat transfer agent, biphenyl, reactor corrosion, 18 uranium 27 alloy, aluminum 27 alloy, molybdenum 27 alloy, hydride 27 corrosion

19 ABSTRACT: The authors investigated the transformations which can occur with reactor materials exposed to biphenyl and evaluated the effect of such factors as the presence of admixtures and the degree of pyrolytic decomposition. The hydride mechanism of corrosion was investigated first with respect to uranium and its alloys with molybdenum. The corrosion tests with biphenyl were carried out in containers made of 1Kh18N9T stainless steel. After evacuating the containers with the specimens, they were pressurized in an arc furnace in an atmosphere of pure argon. The changes undergone by a variety of metals, alloys and oxides are

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ACCESSION NR: AT5007906

5

tabulated. The authors also investigated the effect of admixtures of water (0.0004-0.7 wt.%) and sulfur (1-3 wt.%) to biphenyl on its corrosive properties. The results indicate that metals and oxides are subject to the following types of transformations in biphenyl: reduction of oxides and hydroxides to the metal or another oxide; formation of hydrides; formation of carbides; and oxidation. Admixture of water to biphenyl in amounts greater than 0.2% was shown to hasten the corrosive failure of aluminum AD-1 and SAP-1 alloy and lead to intercrystalline corrosion, as well as embrittling and lowering the strength of the metals. Corrosion was also accelerated by sulfur. Admixtures of water do not affect SAP-1 alloy as much as aluminum AD-1. Orig. art. has: 7 figures and 1 table.

21

ASSOCIATION: None

SUBMITTED: 01Aug64 **ENCL:** 00 **SUB CODE:** MM

NO REF SOV: 001 **OTHER:** 003

Card 2/2

BYCHKOV, Yu.F.; IVANOV, V.A.; ROZANOV, A.N.

Reversibility of $\beta \to \omega$ transformations in Zr-16% Nb alloys.
Fiz. met. i metalloved. 17 no.4:547-553 Ap '64. (MIRA 17:8)

1. Moskovskiy inzhenerno-fizicheskiy institut.

ACCESSION NR: AP4034053 S/0126/64/017/004/0547/0553

AUTHORS: By*chkov, Yu. F.; Ivanov, V. A.; Rozanov, A. N.

TITLE: Reversibility of β→ω transition in Zr-16% Nb alloy

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 547-553

TOPIC TAGS: zirconium alloy, niobium alloy, beta phase decomposition, zirconium iodide, arc furnace, primary annealing, modulus of elasticity, solid solution, arc furnace MIFI 93, MPShchPR 54

ABSTRACT: Conditions generating the reaction ω→β in zirconium alloys were investigated. A 16% niobium alloy was used on which the kinetics of an isothermal β-phase decomposition at 300-600C was studied by measuring the hardness and electric resistivity of the specimen and by looking at its structure. Zr-16% Nb ingots weighing 25 to 70 g were prepared from 99.8% pure iodide zirconium in an arc furnace MIFI-9-3 under argon. Furnace temperatures were regulated by MPShchPR-54. The specimens were sealed in evacuated quartz vials, annealed for 3 hours at 900 C, and quenched in cold water. To study the ω→β transition, property changes in the alloy were determined by several sets of heat treatments.

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ACCESSION NR: AP4034053

The primary annealing was in the temperature range 240 to 450C and the secondary one at 475-575C. A graph of specimen hardness versus annealing time shows a minimum hardness in each of the curves, decreasing in value by increasing the secondary tempering temperature. No sharp boundary was observed between temperature regions of direct and reverse $\beta \rightarrow \omega$ transitions. The modulus of elasticity E and the electrical resistivity ρ were also plotted as functions of secondary annealing time at 550C. The solution of the ω-phase in the β-phase during the secondary annealing process was found to cause an increase in ρ and a decrease in E. Precipitation of the ω-phase formed during the early stages of the Zr-16% Nb β-solid-solution decomposition in the 240-300C primary annealing process is believed to be transferred to the β-solid solution during the secondary short-duration annealing process at 550-575C. Orig. art. has: 4 figures.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Institute of Engineering Physics)

SUBMITTED: 21Feb63 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 003

Card 2/2

BYCHKOV, Yu.F.; IVANOV, V.A.; ROZANOV, A.N.

Formation of scale with a structure of $6ZrO_2.Nb_2O_5$ on zirconium-niobium alloys. Met. i metalloved. chist. met. no. 4:47-57 '63. (MIRA 17:5)

DASHKOVSKIY, A.I.; ROZANOV, A.N.; BYCHKOV, Yu.F.; LAPTEV, I.D.

Changes of properties during repeated heat treatments, stress-rupture strength and the internal friction of sintered alumirum powder. Met. i metalloved. chist. met. no. 4:160-174 '63.
(MIRA 17:5)

S/755/61/000/003/009/027

AUTHORS: Bychkov, Yu. F., Vlasov, V. V., Rozanov, A. N.

TITLE: Some properties of ternary β solid solutions of zirconium with niobium and molybdenum.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chistykh metallov. no.3. 1961, 82-95.

TEXT: The paper provides a literature survey and a report on an experimental investigation on certain alloys of the Zr-Nb-Mo which exhibit a highly stable β solid solution and which have good over-all mechanical properties, good heat resistance, forgeability, and refractoriness. The literature survey is largely based on "The metallurgy of zirconium" (B. Lustman, F. Kerze, Jr., eds., McGraw-Hill, 1955; Foreign Lit. Publ. House, Moscow, 1959), the contribution of O. Ivanov, and V. K. Grigorovich at the 2d Internat'l Conf. on the Peaceful Uses of Atomic Energy, Geneva, 1958, a paper by Yu. F. Bychkov, et al., (Atomnaya energiya, v.2, no.2, 1957, 146), Domogala, R. F., et al. (J. Metals, v.9, no.10, sec. II, 1957, 1191-6). The especial objective of the present investigation was the study of the ternary β solid solutions of Zr with Nb and Mo in that region of the phase diagram in which such solid solutions could be expected to exist to form refractory alloys.

Card 1/4

Some properties of ternary β solid solutions ... S/755/61/000/003/009/027

The partial replacement of Nb by Mo is of especial interest since a given Mo addition is twice as effective in stabilizing the β phase (O. Ivanov, loc. cit.). The preparation of the alloys in an arc furnace in an atmosphere of chemically pure Ar, purified by a Zr getter melt, is described; the alloy composition is summarized in a half-page table. Corrosion tests were made on 10-mm diam, 6-mm high, cylindrical specimens prepared from 8-10-time remelted 20-25-g powder batches, which were surface-ground and acetone-washed. Mechanical tests were performed on 80-90-mm long rods weighing 65-70 g; elongation-test specimens were 3 mm diam, 20 mm long. Heating for hardness tests was performed at 5°C/min, with 3-min hold at test T and a one-minute diamond-pyramid impression under a 1-kg load. The m.p. was measured pyrometrically by observing the interior of a small aperture in the specimen up to the moment of the filling-in of the aperture. The modulus of normal elasticity was measured by means of the flexural resonance frequency of a freely suspended cast rod on the vacuum equipment described by the senior author, et al. (in Atomnaya energiya, v.2, no.2, 1957, 152) an equipment which was also employed for resistance measurements by means of a twin bridged-T type Thomson network. A vacuum dilatometer was used in the elongation measurements. The refractoriness of the various alloys was tested by 125-hr air oxidation at 600°C. The most refractory of the alloys tested was found to be the alloy with 15% Nb and 10% Mo. Small (0.1-0.5%) additions of Fe, Ni, Cu, and Ag increased the refractoriness of all

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Some properties of ternary β solid solutions ... S/755/61/000/003/009/027

Zr-Nb-Mo alloys substantially. The kinetics of the oxidation comprise a low-rate
first stage, in which a black, tightly-adhering, oxide film is formed, and a more
steeply rising second stage, in which a grey oxide forms on the edges of the speci-
mens. The black film on the heat-resistant alloys was studied by X-ray diffraction
and was found to contain not only ZrO_2 (as on pure Zr), but a small quantity of
compounds such as $Nb_2O_5 \cdot 6ZrO_2$ (cf. Spitsyn, V.I., et al., Akad. n. SSSR. Dokl.,
v.131, no.4, 1960, 858, and Klopp, W.D., et al., Report no.712 at the 2d Internat'l
Conf. on the Peaceful Uses of Atomic Energy, Geneva, 1958). The mechanical
tests (H_{RC} of a 50% deformed specimen versus T upon 30-min hold) show that the
β solid solution in the optimal alloy has significant stability, but is not thermo-
dynamically stable and decomposes at high T with the formation of a second phase.
The heat resistance of the alloys was tested by H_V and stress-rupture tests at
various T. The H_V of most of the alloys dropped rapidly beyond 500°C (except for
the 750°C break of the 48% Ni, 3% Ti alloy recommended in Nucl. Sci. Abstracts,
v.28, no.2232, 1959). Alloys of the 15Nb-10Mo type have about the same H_V at 680°C
as Zircalloy-2 has at 300°C. The high heat resistance of β solid solutions of Zr
is in consonance with the findings set forth in D. Douglass's brief communication in
Reactor Core Materials, Aug. 1960, 44. The physical properties of the 15Nb-10 Mo
alloy were further investigated. Its m.p. is 1,640°C; with the addition of 0.5% each

of Fe, Cu, Ni, and Ag its m.p. is 1,525°C. E at room T is 8,600 kg/mm^2, i.e., less than that of Zr (10,800 kg/mm^2), but at 900°C the E of the alloy is 6,750 against that of Zr which is 3,420 kg/mm^2. The linear expansion coefficient is small ($6.5 \cdot 10^{-6}$/°C) and almost T-independent in the 100-800°C range. The calculated heat-conductivity coefficient at 500°C of the alloy is somewhat higher than that of Zr (0.2 against 0.16 w/cm·°C. There are 7 figures, 3 tables, and 14 references (6 Russian-language Soviet, 2 Russian-language translations of English-language originals, and 6 English-language).

ASSOCIATION: MIFI (Moscow Engineering Physics Institute).

ROZANOV, A.N.

Effect of tempering on the hardness and structure of acicular martensite. Met. i metalloved. chist. met. no.3:290-294 '61.
(MIRA 15:6)

(Steel--Heat treatment) (Martensite)

deceased

RUDNITSKIY, A.A. [deceased]

Effect of iridium on the mechanical and electrical properties of palladium. Zhur.neorg.khim. 7 no.10:2361-2366 O '62. (MIRA 15:10)

(Iridium-palladium alloys—Electric properties)

ROZANOV, A.S.

Map of the utilization of the water resources of Australia.
Vest. Mosk. un. Ser. 5:Geog. 18 no.5:45-49 S-O '63.
(MIRA 16:11)

1. Akademiya nauk SSSR.

ROZANOV, A. P., Engr. Card. Tech. Sci.

Dissertation: "On the Theory and Calculations of Injection." Moscow Inst of Chemical Machine Building, 24 Apr 47.

SO: Vechernyaya Moskva, Apr, 1947 (Project #17836)

ROZANOV, A.V., inzh. (g.Artemovsk)

Provide for smooth train movement. Put' i put.khoz. no.7:35-37 '62. (MIRA 15:7)

(Railroads--Track)

ROZANOV, A.V., inzh.

Textbook for preparing roadmasters ("Installation, maintenance, and repair of railroad track" by V.B. Kantor, G.I. Pototskii. Reviewed by A.V. Rozanov). Put' i put. khoz. no.3:41-42 Mr '59.
(MIRA 12:6)

1. Nachal'nik tekhnicheskoy shkoly, g. Artemovsk.
(Railroads--Track) (Kantor, V.B.)
(Pototskii, G.I.)

ROZANOV, A.V., inzh. (Artemovsk)

Using the method of regulating partial shifts in correcting curves.
Put' i put.khoz. no.11:28-29 N '58. (MIRA 11:12)
(Railroads--Curves and turnouts)

Rozanov, A. V.

ROZANOV, A.V. (Artemovsk)

Shortcomings in the method of the Amur Railroad. Put' i put. khoz.no.12:43 D '57. (MIRA 10:12)
(Railroads--Curves and turnouts)

ROZANOV, A.V., inzh. (g.Artemovsk)

Use the 25-meter chord. Put' i put. khoz. 5 no.3:37-38 Mr '61.
(MIRA 14:3)

(Railroads--Curves and turnouts)

27938
S/194/61/000/004/025/052
D201/D302

13.2000

AUTHORS: Kozanov, A.V. and Kukhtenko, V.I.

TITLE: A method of designing an automatic control system with a near optimum transient

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 4, 1961, 33, abstract 4 V284 (V sb. Samoletnoye elektrooborud., no. 1, M., Oborongiz, 1960, 63-69)

TEXT: A method is given of designing an approximately optimum follow-up system as described by a differential equation of the second order. The results obtained are used to obtain a near-optimum transient in a system of a higher order. The analyzed system consists of a mismatch-meter, an inertialess amplifier and a motor (the aperiodic and integrating networks being connected in series). When limiting the voltage applied to the motor, the value of the error at which the switching-over of the control input should occur, and the duration of the second interval of the transient do not

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S/194/61/000/004/025/052
D201/D302

A method of designing...

depend on the input signals, but are determined by the time constant of the motor and by its maximum speed. A correcting circuit 4/1
is given to provide the necessary switching. The transient of the follow-up system described in the first approximation by a differential equation of the fifth order is also obtained as a near optimum one, providing a similar correcting circuit is used. /Abstracter's note: Complete translation/

Card 2/2

[illegible]

PHASE I BOOK EXPLOITATION SOV/4414

Samoletnoye elektrooborudovaniye; sbornik statey, No 1 (Aircraft Electric Equipment; Collection of Articles, No 1). Moscow, Oborongiz, 1960. 106 p. Errata slip inserted. 3,600 copies printed.

General Ed.: A. F. Fedoseyev, Candidate of Technical Sciences; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: V. P. Rozhin; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers engaged in designing and operating aircraft electric equipment. It may also be of interest to those working in the electrical industry, and to teachers, instructors and students in electrical engineering schools of higher and secondary education.

COVERAGE: The book is a collection of 9 articles dealing with problems in designing, calculating and operating aircraft electric equipment, and electric motors, regulators, instruments, etc. The use of heat-resistant coatings and

Rozanov, A. V., and V. I. Kukhtenko. A Method for Constructing an Automatic Control System With Almost Optimal Transient Conditions 63

Prusov, M. A., and A. V. Vershinkin. Instrument for Measuring Quantity of Electricity, Energy and Arcing Period 70

Gomel'skaya, A. I., and D. R. Yasin. Experience Gained in the Use of Chemical Nickelplating 79

Sayenko, A. D., and S. P. Shakay. Use of Epoxide Resins as Sealing and Impregnating Compounds 83

Ivanova, L. S., and A. P. Vasil'yeva. Determination of Maximum Allowable Operational Temperatures for Glass Textolites 92

AVAILABLE: Library of Congress

Card 3/3

10-18-60/ec

ROZANOV, A.V.; KUKHTENKO, V.I.

Designing an automatic control system with nearly optimum transient conditions. Sam.elektr. no.1:63-69 '60. (MIRA 14:3)
(Airplanes--Controls)

ROZANOV, A. Ya.

"The Effect of Prolonged Medicinal Sleep on the Vitamin C Requirements of an Organism (Experimental Clinical Investigation)." Cand Med Sci, Odessa State Medical Inst, Odessa, 1953. (RZhBiol, No 3, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

ROZANOV, A. Ya. and BULATSKIY, N. P.

"Problem of the Effect of the Products of Decomposition of Tagged Thiamine on the Accuracy of Its Determination in Urine," a report presented at the Scientific Conference Devoted to the Application of Radioactive Substances in Medicine, Odessa Medical Institute, December 1954, Arkhiv, Patol., No. 2, 1956

Abstract:

It is known that thiamine tagged with sulphur (S^{35}) is partially destroyed in the human organism, and that the products of its decomposition, which contain radioactive sulfur, are secreted with the urine. When the thiamine S^{35} which is being estimated on the basis of radioactivity is isolated from the urine by Yansen's method as modified by Yeliseyeva, an error can result. The authors of the report showed that the cause of such an error may be that the ratracted from the urine in the isobutyl alcohol together with thiochrome. In this way, the greater the quantity of the products of decompositioh which accompany thiamine in the urine, the greater the percentage of error.

ROZANOV, A. Ya.

"The Decomposition of Tagged Thiamine in the Organism and the Elimination of Radioactive Sulfur With Urine", a report presented at the Scientific Conference Devoted to the Application of Radioactive Substances in Medicine, Odessa Medical Institute, December 1954, Arkhiv, Patol., No 2, 1956

Abstract:
For the determination of the rate of decomposition of thiamine S^{35}, in the organism of dogs, guinea pigs, and white rats, the tagged vitamin was injected subcutaneously in a dose corresponding to the requirements of the animals. The content of thiamine S^{35} (extracted from the urine by the thiochrome method of Yansen modified by Yeliseyeva), total S^{35}, and free H_2SO_4 according to Folin, were determined during the following days in the daily urine. It was discovered that more than 90° of the parenterally injected thiamine S^{35} is retained in the organism for 2-3 weeks. The secretion of radioactive sulphur by these animals is insignificant and consists of from 0.5 up to 5° daily in relation to the total S^{35} injected into the organism in the form of thiamine. The secretion of unchanged thiamine, S^{35} is significant only in the first days after the introduction of thiamine; in the days after that, the S^{35} of thiamine constitutes only from 2 to 5% of all the radioactive sulphur which is eliminated with the urine.

Rozanov, A. Ya.

2723. **Need for vitamin C for animal organism under prolonged narcotic sleep.** A. Ia. Rozanov *Vop. med. Khim.*, 1955, 1, 285—289 *Referat. Zh. biol. Khim.*, 1956, Abstr. No. 13382.—Sleep induced by barbitone or luminal leads to an increased breakdown of ascorbic acid in the animal organism. This is demonstrated by the lowered content of both its free and bound forms in the blood and organs of the guinea pig under narcotic sleep compared with that of control animals. With white rats under these conditions there is an increased biosynthesis of ascorbic acid in the tissues which evidently is to be explained by the increased need of the animal organism, produced by the conditions of the experiment, for vitamin C. (Russian) J. Harding

ROZANOV, A. YA.

1

Comparative effects of narcosis with luminal, medinal, and barbamil on vitamin C metabolism in dogs. A. Ya. Rozanov (N. I. Pirogov State Med. Inst., Odessa). *Farmakol. i Toksikol.* 18, No. 4, 12-17(1955).—Subcutaneous narcotic doses of luminal, medinal, and barbamil intensify biosynthesis of vitamin C and increase the bodily requirement for the vitamin. Therapeutic barbamil narcosis has the least effect; medinal has more and luminal still more. Ascorbic acid assays were made in urine and blood, dihydroascorbic acid assays in blood. Tests ranged in time from 14 to 40 days.

Julian F. Smith

Rozanov A. Ya.

1

Med

6199. Preparation and preservation of methanol-ether solutions of dehydroascorbic acid. A. Y. Rozanov *Biokhimija*, 1955, 20, 645—648 (Dept. of Biochem., Pirogov State Med. Inst., Odessa, USSR.).—As aq. soln. of dehydroascorbic acid are unstable, it was prepared by the direct oxidation of ascorbic acid suspended in anhyd. methanol with Br_2 at −10° (dehydroascorbic acid is 10 times more sol. in methanol than is ascorbic acid). The reaction mixture was simultaneously neutralised to Bromophenol Blue with cold (−10°) saturated Na methoxide in anhyd. methanol. NaBr (over 99·5%) was pptd. with 20 vol. of anhyd. ether (−15° to −20°) which removed the Bromophenol Blue by adsorption. Soln. of dehydroascorbic acid (600 mg./100 ml.) thus prepared contained no more than 20% of side products and could be preserved unchanged in the cold for several months. Solid dehydroascorbic acid can be obtained by the distillation *in vacuo*. It is sol. in methanol–ether mixtures (up to methanol : ether = 1 : 80) and very sol. in water and methanol; practically insol. in ether, benzene, and *iso*amyl alcohol. (Russian)

A. K. GRZYBOWSKI.

ROZANOV A YA

TSUVERKALOV, D.A.; ROZANOV, A.Ya.

Requirement and biosynthesis of vitamin C in anesthesia. Ukr. biokhim.zhur.27 no.2:193-196 '55. (MLRA 8:10)

1. Kafedra biokhimii Odesskogo meditsinskogo instituta im. N.I. Pirogova.

(ANESTHESIA, effects,
on vitamin C biosynthesis & requirement in)
(VITAMIN C, metabolism,
biosynthesis & requirement in anesth.)

Rozanov, A. Ya.

1/

The reduction of dehydroascorbic acid in the intact ani-
mal organism. A. Ya. Rozanov (N.I. Pirogov Med. Inst.,
Odessa). *Biokhimiya* 21, 208-72(1956).—Expts. were per-
formed with male white rats as animals which synthesize
vitamin C, and male guinea pigs as animals which do not
synthesize their own vitamin C. The ration of the guinea
pigs consisted of 60 g. carrots, and oats and hay ad libitum.
The ration of the white mice consisted of 12 g. dry milk
having 8% moisture, 14-18.0% fat, 22.0-26.0% pro-
tein, 13.0-17.0% lactose, 30.0-39.0% sucrose, 3.0-4.0%
ash; 0.5 g. dry yeast, 0.2 mg. fish-oil, oats ad libitum, and
40 ml. H_2O. Animals were kept on these diets for 6-7 days.
They were then placed into special cages over Büchner fun-
nels to enable the collection of 24-hrs. urine specimens.
Five ml. of 20% HPO_3 and 5 ml. of glacial AcOH were added
to the urine-collecting containers and care taken to prevent
undue contact with the air to prevent the ascorbic acid
(AA) from decompg. For the detn. of AA an aliquot of the
urine was dild. to 5 times its vol. with H_2O, acidified with
HCl, and titrated with 0.001*N* 2,6-dichloroindophenol to a
pink color which persisted for 30 sec. The parenterally ad-
ministered dehydroascorbic acid (DAA) was prepd. by a
method previously described (*C.A.* 50, 9491*a*). To secure
dependable results it is necessary to preliminarily sat. the
test animals with AA, because in the presence of vitamin C
insufficiency part of the DAA is retained by the animal tis-
sues. The process of DAA reduction in the organism of
white male rats is 2-3 times as intense as in guinea pigs, and
is independent of the DAA dose administered. In the
guinea pigs the rate of DAA reduction bears a relation to the
injection dose. B. S. Levine

T

USSR/Human and Animal Physiology (Normal and Pathological)
Metabolism. Vitamins.

Abs Jour : Ref Zhur Biol., No 6, 1959, 26305

Author : Rozanov, A.Ya., Bulatskiy, N.P., Tsuverkulov, D.A., Shcherbakova, L.V.

Inst : -

Title : The Study of Radioactive Thiamin Metabolism in an Animal Organism.

Orig Pub : Tr. Vses. konferentsii po med. radiol. Eksperim. med. radiol. M., Medgiz, 1957, 283-287

Abstract : It was discovered in a study of thiamin (vitamin B_1) metabolism in the organism of rats with the aid of thiamine-S35 (I) that S35 I in its decay in the organism of animals is included in tissue proteins. It was shown in experiments with methionine-S35 that I cannot form in the organism of a rat from sulphur-containing amino-acids and products of B_1decay. I was introduced to dogs, guinea

Card 1/2

ROZANOV, A.Ya.

Effect of ascorbic acid on thiamine metabolism in white rats [with summary in English]. Vop.pit. 17 no.3:43-47 My-Je '58. (MIRA 11:6)

1. Iz kafedry biokhimii (zav. - prof. D.A.TSuverkalov) Odesskogo meditsinskogo institute.
(VITAMIN B1, in urine,
eff. of vitamin C (Rus))
(VITAMIN C, effects,
on urinary vitamin B1 (Rus))

V

COUNTRY : USSR

CATEGORY : Pharmacology and Toxicology. Narcotics and Hypnotics

ABS. JOUR. : RZhBiol., No. 1 1959, No. 4410

AUTHOR : Rozanov, A. Ya.; Bulatskiy, N. P.

INST. : -

TITLE : Effect of Sleep Induced by Medinal on the Excretion of Radioactive Thiamine (Aneurin) with the Urine

ORIG. PUB. : Farmakol. i toksikologiya, 1958, 21, No 2, 61-64

ABSTRACT : Rats which three days before the experiments had received each 40 ml. of milk daily and 1 mg. of thiamine bromide subcutaneously, were each injected 100 mcg/g of S^{35}-thiamine (ST) and simultaneously 0.2 g/kg of medinal. It was shown that two times less unaltered ST than in the control is excreted with the urine of the experimental animals; this was due on one hand to somewhat

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